

CRYOGENIC FLUID DELIVERY SYSTEM

ABSTRACT

A cryogenic fluid delivery system includes a pump having a pumping cylinder within which a sliding pumping piston is positioned. The pump also includes an actuating cylinder within which a sliding actuating piston is positioned and a supplemental linear actuator, such as a hydraulic cylinder. The pumping and actuating pistons and supplemental linear actuator are joined by connecting rods. A portion of the cryogenic liquid pumped from a storage tank is vaporized in a heat exchanger and introduced into the actuating cylinder to power the pump with the assistance of the supplemental linear actuator so that high pump discharge pressures may be obtained.